

WHAT IS CLAIMED IS:

1. A method of transferring a sample, using a cassette table for mounting a cassette which receives plural samples transferred from another position, said cassette table being exposed to a transferring atmosphere, the method comprising the steps of:

carrying in, one by one, said samples in said cassette which is mounted on said cassette table, to a locking mechanism in an atmospheric condition by use of an atmospheric transferring device;

changing over said locking mechanism from the atmospheric condition to a reduced pressure condition as compared to the atmospheric condition;

carrying in, one by one, said samples in said locking mechanism to a transferring chamber, by use of a vacuum transferring device which is installed in said transferring chamber;

processing, one by one, said samples carried into said transferring chamber, in a vacuum processing chamber of plural vacuum processing chambers;

carrying out, one by one, samples processed in said vacuum processing chamber, to said locking mechanism in the reduced pressure condition, by use of said vacuum transferring device;

changing over said locking mechanism from the reduced pressure condition to the atmospheric condition; and

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carrying out, one by one, said samples in said locking mechanism, to said cassette mounted on said cassette table, by use of said atmospheric transferring device,

wherein, during a time that said samples are carried, and during a processing time of said samples, a same surface of the samples is maintained substantially horizontal.

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